Modeling Earth's Layers: Composition VS. Physical Properties

Objective: Students will create two different graphical models of Earth's layers, accurately representing layering according to composition and physical properties.

Materials:

- Textbook reading copy (without figures) pgs. 233-235
- Notebooks
- Colored pencils
- Blank sheet of paper for drawing (use paper from scrap paper basket near recycling)

Procedure:

1. Working either in a small group, cooperative pair, or independently, ***read the text*** from pgs. 233-235. Do not write on these copies! As you read, ***record characteristics*** of Earth's layers based on composition and physical properties ***in a two column chart in your notebook***. Set up your chart as I have below. Note the first examples.
2. When you have extracted all characteristics of Earth's layers from the reading, and built your chart, ***use this information to create a drawing*** that accurately communicates the layering distribution, sizes, and descriptive properties of the layers such as density or temperature. I have suggested a possible layout for you below, but you are free to create any representation of the interior of Earth you wish – as long as the layers based on composition and the layers based on physical properties are represented. Use the internet to research other physical properties such as pressure at various depths, and add this data to your drawing.
3. ***Color your drawing*** using colored pencils to make an aesthetically (visually) pleasing and neat graphical model. Colors should be chosen with purpose, and indicate physical properties or composition. Add a key for you colors. For example, a darker color like blue or grey would work well to represent the inner core of Earth.
4. ***Label*** everything! Label the layers, your key, and the drawing itself with a large bold title.

Example Chart:

Layers based on Composition	**Layers based on Physical Properties**
Crust: outer layer, thin, oceanic and continental. Oceanic = 7km thick. Continental = 8-75km thick.	Pressure increases with increasing Depth. 4 layers based on physical prop.

Example Drawing layout: One could easily create both layered models using one large drawing in the shape of half a circle. The curved part of the circle on top, draw a line down the center to split the half circle into two parts. One side would be for layering based on composition and the other for layering based on physical properties. See below. This is just one possible way to set up your drawing.

***Special Notes:** Radius of Earth = 6,370km (not including 5-100km thick lithosphere and 5-70km thick crust). Your layers should communicate scale and relative sizes accurately!